THE COMPLETE LIFE HISTORY OF *CHARAXES LATONA* BUTLER (LEPIDOPTERA: NYMPHALIDAE) FROM CAPE YORK PENINSULA, QUEENSLAND, AUSTRALIA

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Abstract

The complete life history of *Charaxes latona* Butler is described from eggs reared from Iron Range, Cape York Peninsula, Australia.

Introduction

Following its discovery in Australia in 1978 (Johnson and De Baar 1979), *Charaxes latona* Butler, 1865 was recorded breeding on *Cryptocarya triplinervis* and a final instar larva and the pupa were described by Wood (1986). The species occurs throughout Papua New Guinea, where it is recorded breeding on plants in several families (Parsons 1998), but no descriptions have been published of the entire life history. During a trip to Iron Range (Cape York Peninsula, northern Queensland) in November 1991, we observed a female ovipositing on a *C. triplinervis* growing in the bed of the Claudie River; however, the resultant larva died in the second instar during a period of unseasonally hot weather in Townsville. In May 2008, we again observed a female ovipositing twice, approximately 15 metres above the ground in a tree growing along the levee of Gordon Creek. We were able to recover both eggs by using an elevating work platform. They were returned to Townsville and reared on wet cuttings of the plant.

Life history

Food plant. Cryptocarya triplinervis R. Br. (Lauraceae).

Egg (Figs 1-2). Hemispherical; diameter 3 mm; flattened apex with slightly depressed smooth central micropyle. Deep yellow when first laid but becoming cream with variable reddish brown dorsal area after 48 hours. Between 24 to 28 fine ridges from micropyle to base.

First instar larva (Fig. 3). Length 4-6 mm. Body dull brownish yellow; thoracic segments slightly darker. Head capsule reddish brown with blackish dorsal and lateral margins and black patches anteriorly. Two pairs of slightly recurved horns; lateral pair reddish brown with white tips and short spines medially; dorsal pair blackish with faint white tips. Posterior segments whitish and produced laterally into backwardly directed curved spines with yellow tips. Body with dorsal and lateral lines of fine white setae.

Second instar larva (Fig. 4). Length 7-10 mm. Head capsule rugose, reddish brown with dorsal area black. Lateral horns red-brown with white tips; dorsal horns black with white tips and short lateral spines and a pair of basal lateral and medial black pointed spines. Prothorax dark red-brown. Remainder of

thoracic and anterior abdominal segments green. Abdominal segment 3 with large white crescent patch dorsally. Dorsolateral lines of faint white spots and lateral and dorsolateral lines of small white setae. Posterior abdominal segments yellowish with terminal segment produced into recurved whitish horns.

Third instar larva (Fig. 5). Length 11-25 mm. Head capsule finely rugose, green with grey or brown margin; eyespots black and mouthparts brown. Pair of recurved pale brown lateral horns with yellow tips. Large black dorsal horns with yellow tips and pointed spines laterally and medially. Short spines with blunt black tips between larger recurved spines. Body green; each segment with dense rows of faint yellow spots. Abdominal segment 3 with large dorsal white crescent patch edged black infused with bright blue flecks. Abdominal segments 5 and 7 with variable dorsolateral white spots edged black with blue flecks. Terminal abdominal segment yellowish orange, produced into inwardly curved, backwardly directed spines and dorsal surface with a small white patch centrally and red-brown triangular areas laterally. Each segment with pairs of short yellow spines forming a lateral line. Prolegs and basal surface whitish.

Fourth instar larva (Fig. 6). Length 26-39 mm. Similar to third instar but developing prominent pink suffusion within white crescent.

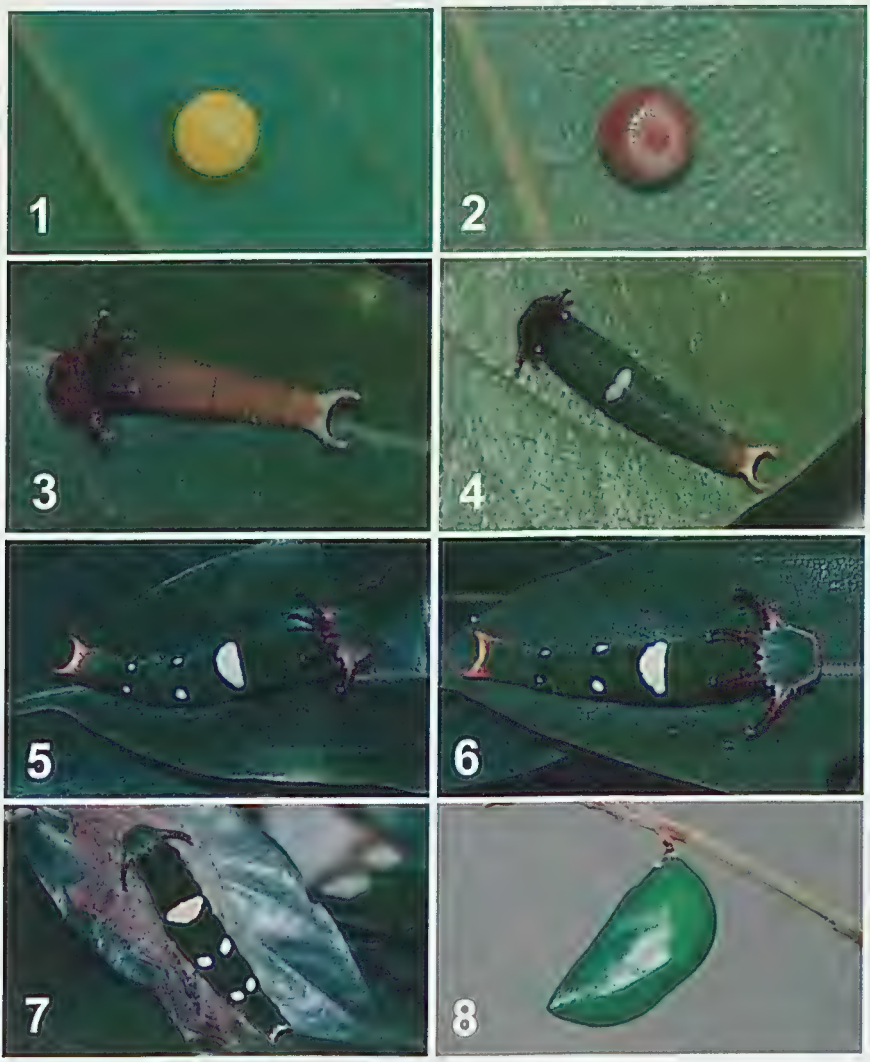
Final instar larva (Fig. 7). Length 40-60 mm. Similar to third instar but terminal segment becoming darker with lateral triangular patches blackish and central white area more extensive. Spiracles white and more prominent.

Pupa (Fig. 8). Length 25 mm. Smooth; dark green. Cremaster black with white globules surrounding anal and genital scars. Variable white areas on wing cases and at distal end.

Observations

The egg recovered in 1991 was laid on the upper surface of the leaf, whereas those laid in 2008 were laid on the undersides of leaves. The newly hatched larva consumed the eggshell. The later instar larvae were similar to the one described by Wood (1986) but a final instar larva from Papua New Guinea, illustrated by Parsons (1998), showed obvious white crescent patches on abdominal segments 3 and 5. It is not known if the additional crescent patch is a consistent difference between Australian and Papua New Guinean populations. The length of the final instar larvae appears consistent with that reported by Parsons (1998) but is substantially larger than the one reared by Wood (1986), even though all produced males. It is possible that female larvae may be larger.

The duration of the stages in Townsville between May and September was as follows: egg 7 days; first instar 6 days; second instar 17-19 days; third instar 16-17 days; fourth instar 14 days; final instar 41-43 days; pupa 18 days.



Figs 1-8. Life history stages of *Charaxes latona*. (1) freshly laid egg; (2) egg after 24 hours; (3) first instar larva; (4) second instar larva; (5) third instar larva; (6) fourth instar larva; (7) fifth instar larva; (8) pupa.

To date, *Cryptocarya triplinervis* is the only plant known to be used by *C. latona* in Australia. In recent years, during studies of the canopy through the Claudie valley, we have commonly observed adult females flying in gaps in the canopy along the levees of the Claudie River and Gordon Creek. *Cryptocarya triplinervis* is a common plant along these levees and the large number of female *C. latona* observed may be a result of the local abundance of the food plant. Further observations would be needed to identify any other food plants in Australia.

Acknowledgements

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References

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